

Appln No. 10/560,666  
Amdt date June 18, 2007  
Reply to Office action of January 17, 2007

### REMARKS/ARGUMENTS

#### Summary of Office action

Claims 1 - 102 were pending prior to the last Office action. Claims 1 - 102 were rejected under 35 U.S.C. § 101.

#### Response

##### *Rejection in light of 35 U.S.C. § 101*

Claims 1 - 102 have been cancelled and new claims 103 - 209 have been submitted. The rejections made in the Office action dated January 17, 2007 stated that claims 1 - 102 contained "non-functional descriptive listings of parts of a mathematical abstraction and are therefore non-statutory under 35 U.S.C. 101" (Office action, p. 2). Applicants respectfully submit that claims 103 - 209 satisfy 35 U.S.C. § 101.

Claim 103 is directed to:

103. A neural network comprising:
- (a) a plurality of neurons,
  - (b) each of the plurality of neurons being a processor with memory and being in an array;
  - (c) the plurality of neurons comprising a plurality of structural neurons;
  - (d) all elemental and structural neurons being configured to be associated with others of the elemental and structural neurons via active connections;
  - (e) each elemental neuron being configured to:
    - (i) represent a unique value input into the artificial neural network system, the unique value being at least one selected from the group consisting of: a stimulus, an event, events, a sequence in a pattern, a sequence of events, an elemental stimulus, a defined elemental patterns, a defined elemental data element, a basic input stimulus, and an output stimulus of information being processed; and
    - (ii) express that unique value as an output when activated by a structural neuron;

Appln No. 10/560,666

Amdt date June 18, 2007

Reply to Office action of January 17, 2007

- (f) each structural neuron being configured to:
  - (i) receive input from a pair of neurons of the plurality of neurons and with which it is an associating neuron; and
  - (ii) express that input as an output to that pair of neurons to activate the pair of neurons for expression.

Applicants respectfully submit that claim 103 is not a "non-functional descriptive listings of parts of a mathematical abstraction". Claim 103 is to a neural network. Neural networks are statutory subject matter under 35 U.S.C. § 101. Indeed, the USPTO maintains a class entirely devoted to data processing using artificial intelligence that includes artificial neural networks. Class 706 includes the following General Statement of the Class Subject Matter:

This is a generic class for artificial intelligence type computers and digital data processing systems and corresponding data processing methods and products for emulation of intelligence (i.e., knowledge based systems, reasoning systems, and knowledge acquisition systems); and including systems for reasoning with uncertainty (e.g., fuzzy logic systems), adaptive systems, machine learning systems, and artificial neural networks.

(1) Note. This class includes systems having a faculty of perception or learning.

(2) Note. This class also provides for data processing systems and corresponding data processing methods for performing automated mathematical or logic theorem proving.

Furthermore, the neural network of claim 103 is not a mathematical abstraction. The neural network in claim 103 has a physical structure including "a plurality of neurons", where "each of the plurality of neurons being a processor with memory and being in an array". The physical structure processes "inputs" that are "unique value(s)", where the unique value is "at least one selected from the group consisting of: a stimulus, an event, an elemental stimulus, a defined elemental pattern, a defined

Appln No. 10/560,666  
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elemental data element, a basic input stimulus, and an output stimulus of information being processed". The physical structure is also capable of expressing outputs. Applicants respectfully submit that structures that process inputs and provide outputs responsive to the inputs produce "a useful, concrete and tangible result" and, therefore, satisfy 35 U.S.C. § 101 (see MPEP § 2106).

In light of the above Applicants respectfully submit that claim 103 is allowable in light of 35 U.S.C. § 101. For reasons similar to those set out above, Applicants respectfully submit that claims 104 - 209 are allowable in light of 35 U.S.C. § 101.

***Failure of Office action to comply with requirements of MPEP***

In addition to the comments noted above, Applicants respectfully submit that the Office action of January 17, 2007 does not comply with requirements set out in the MPEP § 2106. Applicants note that MPEP § 2106 specifies that a search be performed and that the claims should be reviewed for compliance with 35 U.S.C. §§ 112, 102 and 103 in addition to 35 U.S.C. § 101. Applicants respectfully submit that the failure to clearly communicate findings with respect to 35 U.S.C. §§ 112, 102 and 103 in the Office action of January 17, 2007 renders the Office action incomplete. While Applicants are content to respond to the rejections raised with respect to 35 U.S.C. § 101, Applicants insist that the Office action of January 17, 2007 is insufficient to constitute a first action for the purpose of determining whether issuance of a Final Rejection is appropriate. On this basis, Applicants wish to emphasize the inappropriateness of issuing a Final Rejection in response to the above amendment. In support of this submission, Applicants refer to MPEP § 706.07:

Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to this action the applicant should amend with a view

Appln No. 10/560,666

Amdt date June 18, 2007

Reply to Office action of January 17, 2007

to avoiding all the grounds of rejection and objection. Switching from one subject matter to another in the claims presented by applicant in successive amendments, or from one set of references to another by the examiner in rejecting in successive actions claims of substantially the same subject matter, will alike tend to defeat attaining the goal of reaching a clearly defined issue for an early termination, i.e., either an allowance of the application or a final rejection.

### Conclusion

In view of the foregoing amendment and response, it is believed that the application is in condition for allowance and, accordingly, reconsideration and allowance is earnestly solicited.

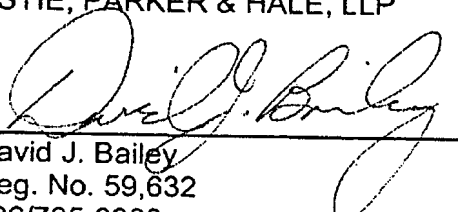
If any questions remain regarding the allowability of the application, Applicant would appreciate if the Examiner would advise the undersigned by telephone.

The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account.

Respectfully submitted,

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